

Application Number:10/084,072  
Group Art Unit Number:3635  
Filing date:02/27/2002  
Name of the examiner who prepared  
the most recent office action:  
Mr. MCDERMOTT, KEVIN  
Title of invention:  
SUPPORT STRUCTURE FOR ISOLATIONG  
EARTHQUAKE MOTIONS

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WHAT I CLAIM IS:

A support structure for isolating earthquake motions, comprising a pressure-receiving steel plate of concave-curved surface adjusted with a bottom of a structure and a pressure-applying steel plate of convex-curved surface facing to said concave-curved surface, a means of interposing two types of pluralities of steel balls between said pressure-receiving curved surface and pressure-applying curved surface, one type of said plurality of steel balls are made with (less accuracy) smaller diameter than that of other

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group of balls, a means of mounting said two  
groups of balls on said pressure-receiving  
curved surface steel plate to come in point  
contact in all direction, a means of covering  
all the surface of top and bottom of steel plate  
except the curved surface with concrete by which  
forming a colum as a foundation of a const-  
ructure, a means of applying convex curved  
surface with a foundation of a construction by  
bolts and nuts, a means of mounting a aligning  
frame for said steel balls on a periphery of  
said concave curved surface to allow said balls  
to move freely, a means of isolating the linkage  
of earthquake motion to the structure by unified

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simultaneous rolling of said two types of balls  
interposed between said foundation pressure-  
receiving upper surface steel plate and oppo-  
siting pressure-applying bottom and steel plate  
surface of said colum.

2. A support structure for isolating earthquake  
motions as claimed in claim 1, a means of moving  
the structural colum vertically by foundation  
pressure-receiving curved surface thereby stop  
the propagating slide movements by shock absorber  
effect of spherical level difference (energy  
generated) by which isolating the earthquake  
motions and stopping the free movement.

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3. A support structure for isolating earthquake motions as claimed in claim 1:  
a means of giving the foundation hoop a function of suppress the foundation column not to remove from the pressure receiving balls when jump-up phenomenon caused by directly under earthquake or float-up phenomenon caused by typhoon, in this case the hoop is on the foundation.